

DECEMBER, 1985  
PART NO. — 314001-05

**SX 64**

**PORTABLE COMPUTER**

**— SCHEMATICS —**

**commodore**

# **SX 64**

## **PORTABLE COMPUTER**

### **— SCHEMATICS —**

**Commodore Business Machines, Inc.**

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# CONTENTS

| Title                 | Page |
|-----------------------|------|
| INTRODUCTION .....    | 1    |
| ASSEMBLY PARTS .....  | 1    |
| BLOCK DIAGRAM .....   | 2    |
| <u>CPU</u>            |      |
| PCB LAYOUT .....      | 3    |
| PARTS LIST .....      | 4    |
| SCHEMATIC .....       | 6    |
| <u>FDD</u>            |      |
| PCB LAYOUT .....      | 7    |
| PARTS LIST .....      | 8    |
| SCHEMATIC .....       | 10   |
| <u>I/O</u>            |      |
| PCB LAYOUT .....      | 11   |
| PARTS LIST .....      | 12   |
| SCHEMATIC .....       | 13   |
| <u>EXPANSION</u>      |      |
| PCB LAYOUT .....      | 14   |
| SCHEMATIC .....       | 15   |
| <u>MONITOR</u>        |      |
| PCB LAYOUT .....      | 16   |
| PARTS LIST .....      | 17   |
| SCHEMATIC — 01 .....  | 20   |
| SCHEMATIC — 01A ..... | 21   |
| <u>P/S 250623</u>     |      |
| WIRING DIAGRAM .....  | 22   |
| PARTS INFO .....      | 23   |
| TROUBLESHOOTING ..... | 24   |
| SCHEMATIC .....       | 25   |

# INTRODUCTION

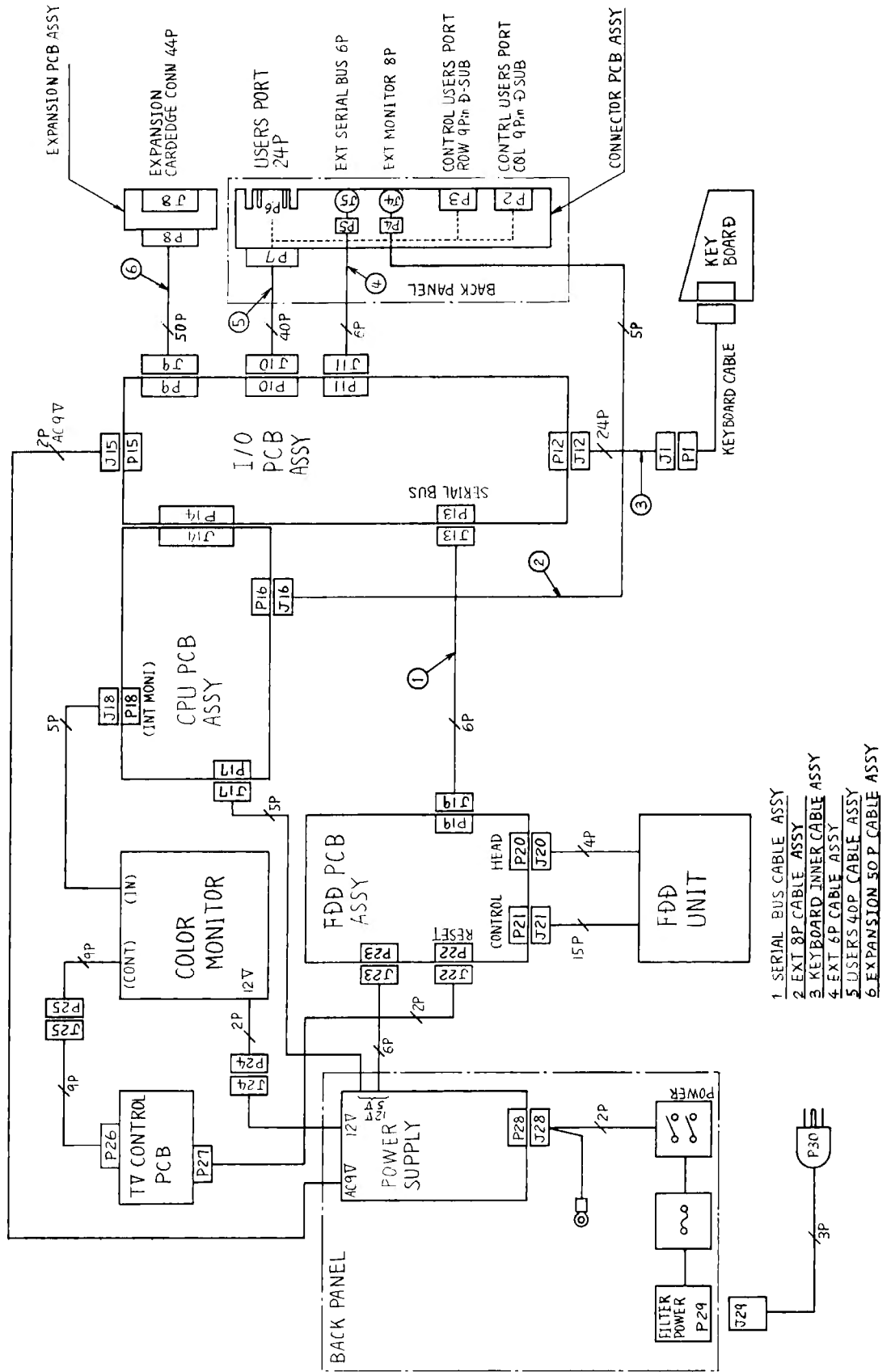
The SCHEMATICS and PARTS LISTS provided herein are intended for use by QUALIFIED SERVICE PERSONNEL. The troubleshooting, theory and diagnostics of the C64, 1702 and 1541 SERVICE MANUALS are **generally** applicable to the SX 64.

Parts availability from Commodore is limited. Some of the custom chips are used in many devices and are in stock. However, parts used in the monitor and power supply may be unique to the OEM manufacturer who supplied those assemblies. Only those parts indicated with a "C" are available from Commodore.

## ASSEMBLY PARTS

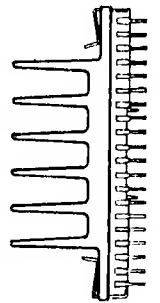
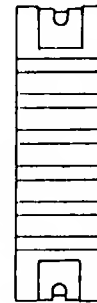
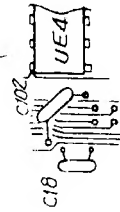
|             |       |                 |
|-------------|-------|-----------------|
| C 250634-01 | SX 64 | KEYBOARD CABLE  |
| C 251249-01 | SX 64 | USERS MANUAL    |
| C 251250-01 | SX 64 | DEMO DISK       |
| C 251555-01 | SX 64 | KEYBOARD        |
| C 314095-01 | SX 64 | SINGLE KEY ASSY |
| C 325519-03 | SX 64 | ALPS DRIVE ASSY |

# BLOCK DIAGRAM





DETAIL



3

# PARTS LIST

## SX 64 CPU

### PCB ASSEMBLY #250408-01

#### PLEASE NOTE

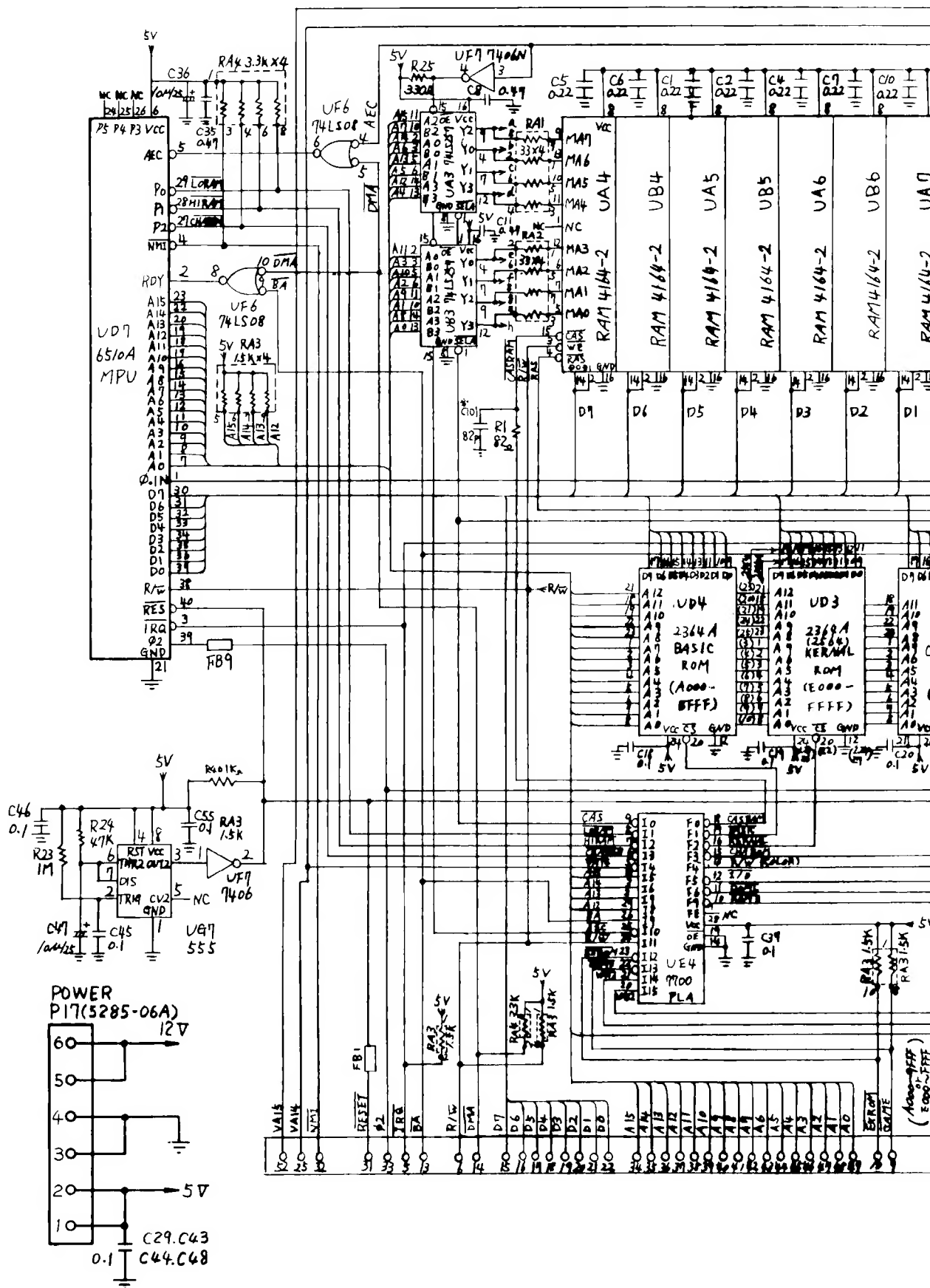
Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

| INTEGRATED CIRCUITS  |                       |                     | RESISTORS (Continued) |         |              |     |
|--|-----------------------|---------------------|-----------------------|---------|--------------|-----|
| UA3  | 74LS257               | DO NOT USE TI OR NS | R21                   | 270     |              |     |
| UA4-UA7  | 4164 DRAM 200NS       |                     | R22                   | 1K      |              |     |
| UB1  | 74LS258               |                     | R23                   | 1M      |              |     |
| UB2  | 74LS373               |                     | R24                   | 47K     |              |     |
| UB3  | 74LS257               | DO NOT USE TI OR NS | R25                   | 330     |              |     |
| UB4-UB7  | 4164 DRAM 200NS       |                     | R31, 32,              | 3.3K    |              |     |
| UC1  | 74LS139               |                     | 33                    |         |              |     |
| UD1  | 2332 ROM CHAR         | C 901225-01         | R34                   | 150     |              |     |
| UD3  | 2364 ROM Kernal       | C 251104-04         | R35                   | 1K      |              |     |
| UD4  | 2364 ROM Basic        | C 901226-01         | R36                   | 120     |              |     |
| UD7  | 6510 Microprocessor   | C 906107-01         | R37                   | 200     |              |     |
| UE3  | 6581 SID              | C 906112-01         | RESISTOR PACKS        |         |              |     |
| UE4  | 7700-001 PLA          | C 906114-01         | RA1, 2                | 33      | 8Pin         |     |
| UE7  | 2114 RAM 300NS        |                     | RA3                   | 3.3K    | 10Pin        |     |
| UF4  | 6567 VIC              | C 906109-04         | RA4                   | 3.3K    | 8Pin         |     |
| UF6  | 7408                  |                     | CAPACITORS            |         |              |     |
| UF7  | 7406                  |                     | C1, 2                 | Ceramic | 0.22 $\mu$ F | 25V |
| UG6  | 4066                  |                     | C3                    | Elect   | 10 $\mu$ F   | 25V |
| UG7  | 555 TIMER             |                     | C4-7                  | Ceramic | 0.22 $\mu$ F | 25V |
| TRANSISTORS  |                       |                     | C8                    | Ceramic | 0.47 $\mu$ F | 50V |
| TR1-8  | 2SC 458               |                     | C9,10                 | Ceramic | 0.22 $\mu$ F | 25V |
| DIODES   |                       |                     | C11                   | Ceramic | 0.47 $\mu$ F | 50V |
| D1   | Diode, Signal WG 713C |                     | C12-14                | Ceramic | 0.1 $\mu$ F  | 25V |
| RESISTORS — All Values are in ohms-1/4 W<br>5% unless noted otherwise. |                       |                     | C15-17                | Elect   | 10 $\mu$ F   | 25V |
| R1   | 82                    |                     | C18-20                | Ceramic | 0.1 $\mu$ F  | 25V |
| R2   | 150                   |                     | C21                   | Elect   | 10 $\mu$ F   | 25V |
| R3   | 100                   |                     | C22                   | Ceramic | 0.1 $\mu$ F  | 25V |
| R4   | 1.5K                  |                     | C23                   | Elect   | 10 $\mu$ F   | 25V |
| R5   | 3.3K                  |                     | C24                   | Ceramic | 470pF        | 50V |
| R6   | 18K                   |                     | C25                   | Ceramic | 0.47 $\mu$ F | 50V |
| R7   | 8.2K                  |                     | C26                   | Elect   | 10 $\mu$ F   | 25V |
| R8   | 1K                    |                     | C27                   | Ceramic | 0.22 $\mu$ F | 25V |
| R9   | 1K                    |                     | C28                   | Ceramic | 0.47 $\mu$ F | 50V |
| R10, 11, 12  | 10K                   |                     | C29                   | Ceramic | 0.1 $\mu$ F  | 25V |
| R13  | 1K                    |                     | C30                   | Elect   | 10 $\mu$ F   | 25V |
| R14  | 270                   |                     | C31, 32               | Ceramic | 2200pF       | 50V |
| R15  | 100                   |                     | C33                   | Ceramic | 0.22 $\mu$ F | 50V |
| R16  | 27K                   |                     | C34                   | Ceramic | 270pF        | 50V |
| R17  | 20K                   |                     | C35                   | Ceramic | 0.47 $\mu$ F | 50V |
| R18  | 820                   |                     | C36                   | Elect   | 10 $\mu$ F   | 25V |
| R19  | 2K                    |                     | C37                   | Ceramic | 0.01 $\mu$ F | 25V |
| R20  | 510                   |                     | C38                   | Ceramic | 150pF        | 50V |
|  |                       |                     | C39                   | Elect   | 10 $\mu$ F   | 25V |
|  |                       |                     | C40-46                | Ceramic | 0.1 $\mu$ F  | 25V |
|  |                       |                     | C47                   | Elect   | 10 $\mu$ F   | 25V |
|  |                       |                     | C48                   | Ceramic | 0.1 $\mu$ F  | 25V |

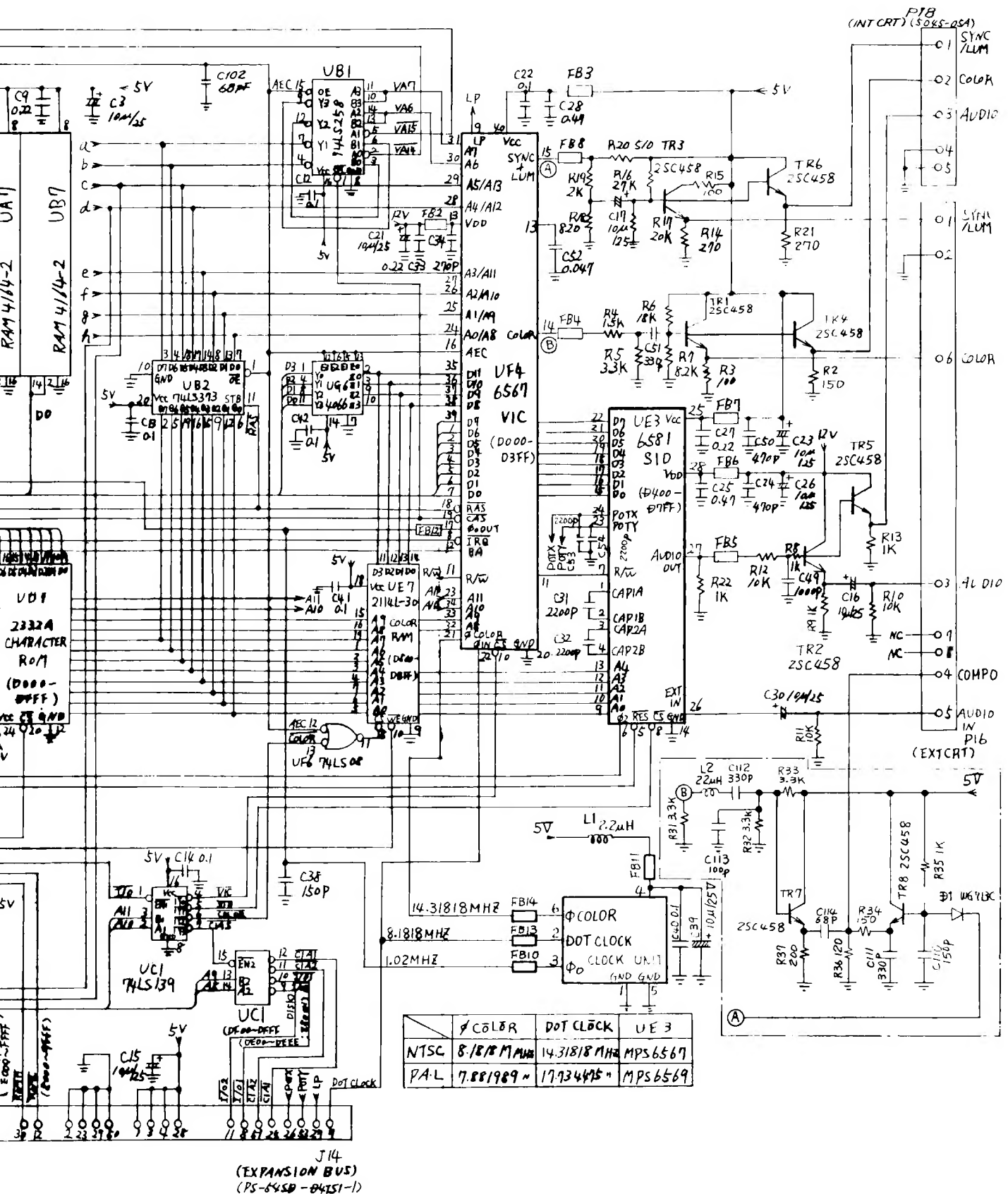
**PARTS LIST PCB ASSEMBLY #250408-01 (Continued)****C - Indicates Commodore Stocked Part Number**

| CAPACITORS (Continued) |         |                |     | MISCELLANEOUS |                                  |
|------------------------|---------|----------------|-----|---------------|----------------------------------|
| C49                    | Ceramic | 1000pF,        | 25V | FB1-14        | Ferrite bead                     |
| C50                    | Ceramic | 470pF,         | 50V | L1            | Coil Inductor 2.2 $\mu$ H        |
| C51                    | Ceramic | 33pF,          | 50V | L2            | Coil Inductor 22 $\mu$ H         |
| C52                    | Ceramic | 0.047 $\mu$ F, | 25V | Y1            | Clock Osc 14.31818 MHz 251105-01 |
| C53, 54                | Ceramic | 1800pF,        | 50V |               |                                  |
| C55                    | Ceramic | 0.1 $\mu$ F,   | 25V |               |                                  |
| C101                   | Ceramic | 82pF           |     |               |                                  |
| C102                   | Ceramic | 68pF           |     |               |                                  |
| C110                   | Ceramic | 150pF,         | 50V |               |                                  |
| C111, 12               | Ceramic | 330pF          |     |               |                                  |
| C113                   | Ceramic | 100pF          |     |               |                                  |
| C114                   | Ceramic | 68pF           |     |               |                                  |





# SX 64 CPU SCHEMATIC DIAGRAM





# PARTS LIST

## SX 64 DISK CONTROL PCB

### PCB ASSEMBLY #250410-01

#### PLEASE NOTE:

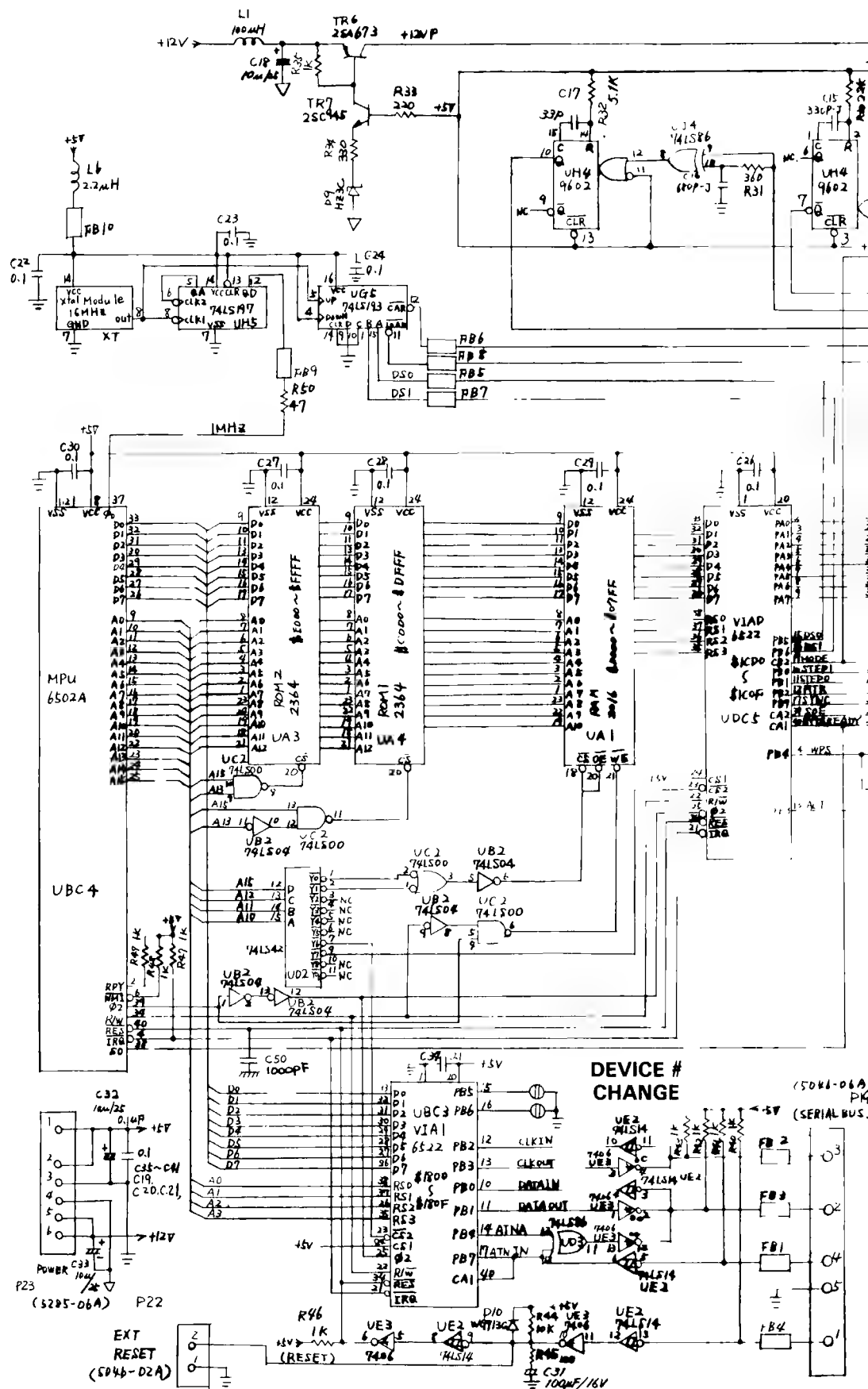
Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

| INTEGRATED CIRCUITS                                |                                  |                 | RESISTORS (Continued)                      |               |             |
|--|----------------------------------|-----------------|--|---------------|-------------|
|  |                                  |                 | — All are carbon 1/4 watt, 5% unless noted |               |             |
| UA1  | TMM2016P RAM                     |                 | R7, 8                                      | 470           |             |
| UA3  | ROM \$E000-\$FFFF                | C 901229-05     | R9   | 2.2K          |             |
| UA4  | ROM \$C000-\$DFFF                | C 325302-01     | R10  | 150 1/4W, 1%  |             |
| UB2  | 74LS04                           |                 | R11  | 100 1/4W, 1%  |             |
| UBC3   | 6522 VIA                         | C 901437-01     | R12  | 2.2K          |             |
| UBC4   | 6502A CPU                        | C 901435-02     | R13  | 470           |             |
| UC2  | 74LS00                           |                 | R14  | 2.2K          |             |
| UD2  | 74LS42                           |                 | R15, 16                                    | 22K           |             |
| UD3  | 74LS86                           |                 | R17, 18                                    | 9.1K 1/4W, 1% |             |
| UDC5   | 6522 VIA                         | C 901437-01     | R19, 20                                    | 220           |             |
| UE2  | 74LS14                           |                 | R21, 22                                    | 150           |             |
| UE3  | 7406                             |                 | R23  | 330           |             |
| UF2  | M54532P TRANS ARRAY              | MITSUBISHI SUB: | R24, 25                                    | 2.2K          |             |
|  | ULN2064 TRANS ARRAY              |                 | R26, 27                                    | 470           |             |
| UF3  | 7404                             |                 | R28  | 360           |             |
| UF5  | GATE ARRAY                       | C 325572-01     | R29  | 510           |             |
| UG4  | 7407                             |                 | R30  | 22K           |             |
| UG5  | 74LS193                          |                 | R31  | 360           |             |
| UH1  | 592 VIDEO AMP                    |                 | R32  | 5.1K          |             |
| UH4  | 9602 ONE SHOT                    |                 | R33  | 220           |             |
| UH5  | 74LS197                          |                 | R34  | 330           |             |
| UJ1  | 592 VIDEO AMP                    |                 | R35  | 1K            |             |
| UJ4  | 74LS86                           |                 | R36  | 330           |             |
| UK4  | LM311 COMPARATOR                 |                 | R37, 38                                    | 150           |             |
| TRANSISTORS  |                                  |                 | R39  | 100K          |             |
| TR1  | 2SC 945                          | SUB:2SC 1815    | R40-43                                     | 1K            |             |
| TR2 5  | 2SA 733                          | SUB:2SA 1015    | R44  | 10K           |             |
| TR6  | 2SA 673                          |                 | R45  | 100           |             |
| TR7  | 2SC 945                          | SUB:2SC 1815    | R46-49                                     | 1K            |             |
| DIODES   |                                  |                 | R50  | 47            |             |
| D1-6   | Signal, 1N4148                   |                 | CAPACITORS                                 |               |             |
| D7   | Zener, 5.1V, 500mW, +/-5% HZ5C-2 |                 | C1, 2                                      | Ceramic       | .1μF, 25V   |
| D8   | Signal, 1N4148                   |                 | C3   | Electrolytic  | 3.3μF, 16V  |
| D9   | Zener, 3.3V, 500mW, +/-5% HZ3C-2 |                 | C4   | Ceramic       | .1μF, 25V   |
| D10  | Signal, 1N4148                   |                 | C5   | Ceramic       | 680pF, 50V  |
| RESISTORS All are carbon 1/4 watt, 5% unless noted |                                  |                 | C6, 7                                      | Tantalium     | 0.47μF, 16V |
| R1   | 680                              |                 | C8   | Ceramic       | .1μF, 25V   |
| R2   | 22K                              |                 | C9   | Ceramic       | 1000pF, 25V |
| R3   | 91 1/4W, 1%                      |                 | C10, 11                                    | Ceramic       | .022μF, 25V |
| R4   | 1.5K                             |                 | C12  | Ceramic       | 330pF, 50V  |
| R5   | 470                              |                 | C13  | Ceramic       | .1μF, 25V   |
| R6   | 680                              |                 | C14  | Ceramic       | 680pF, 50V  |
|  |                                  |                 | C15  | Ceramic       | 330pF, 50V  |
|  |                                  |                 | C16  | Ceramic       | 680pF, 50V  |
|  |                                  |                 | C17  | Ceramic       | 33pF, 50V   |
|  |                                  |                 | C18  | Electrolytic  | 10μF, 25V   |
|  |                                  |                 | C19-21                                     | Ceramic       | .1μF, 25V   |

# **PARTS LIST SX 64 CPU PCB ASSEMBLY #250410-01 (Continued)**

**C - Indicates Commodore Stocked Part Number**

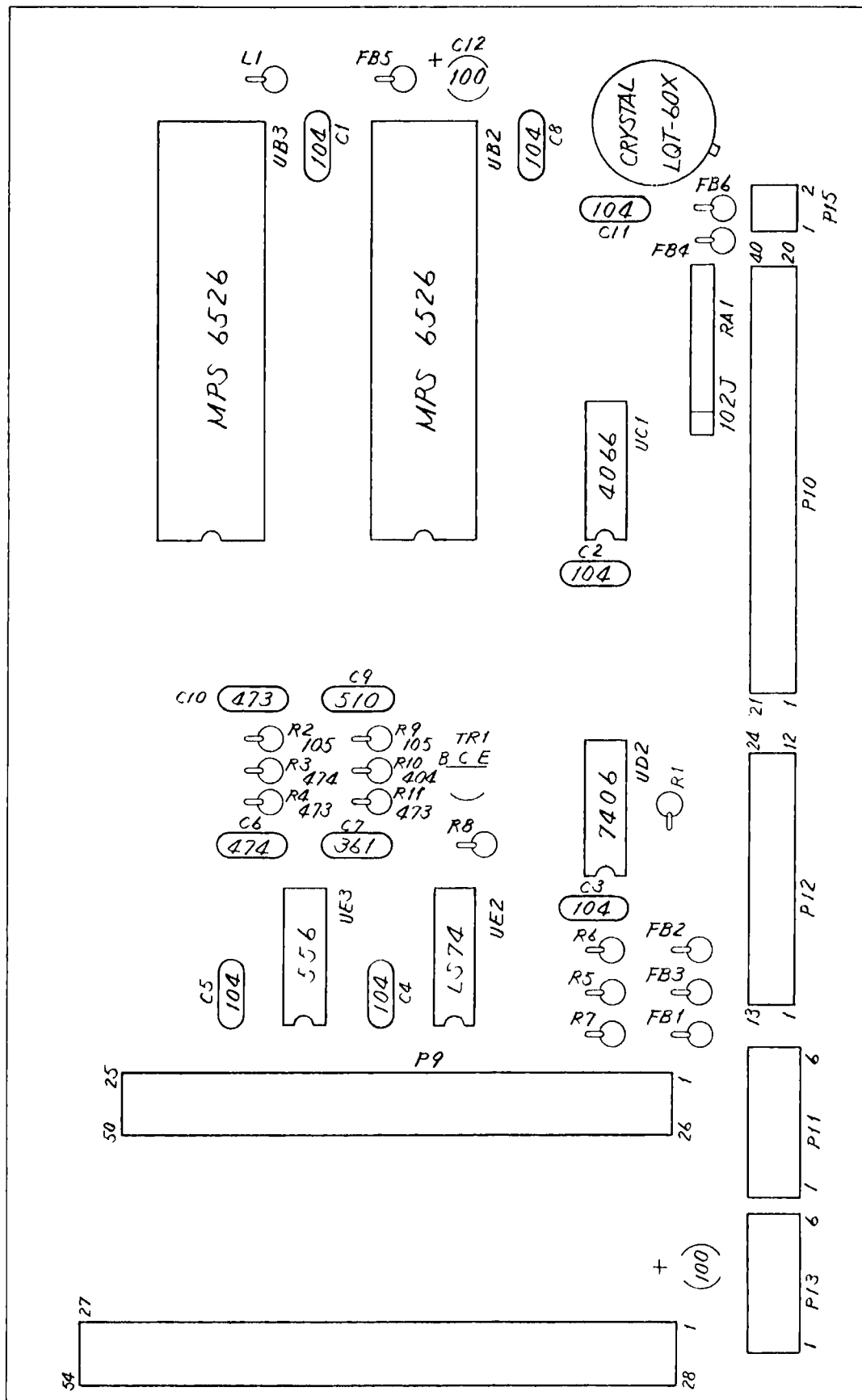
| CAPACITORS (Continued) |              |              |     | MISCELLANEOUS – PCB ASSY #1540048 |   |
|------------------------|--------------|--------------|-----|-----------------------------------|---|
| C22-30                 | Ceramic      | .1 $\mu$ F,  | 25V | FB1-10                            | Ferrite Bead  |
| C31                    | Electrolytic | 100 $\mu$ F, | 16V | L1-3                              | Coil Inductor 100 $\mu$ H   |
| C32, 33                | Electrolytic | 10 $\mu$ F,  | 25V | L4, 5                             | Coil Inductor 22 $\mu$ H  |
| C34-41                 | Ceramic      | .1 $\mu$ F,  | 25V | L6                                | Coil Inductor 2.2 $\mu$ H   |
| C50                    | Ceramic      | 1000pF,      | 25V | Y1                                | Crystal Module 16 MHz 50ppm (NDK, Tyocom)<br>325566-01 Sub:<br>Crystal Module 16 MHz 100ppm (NDK, Tyocom,<br>Kyocera) 325566-02 |







# **SX 64 I/O PCB LAYOUT**



# PARTS LIST

## SX 64 I/O

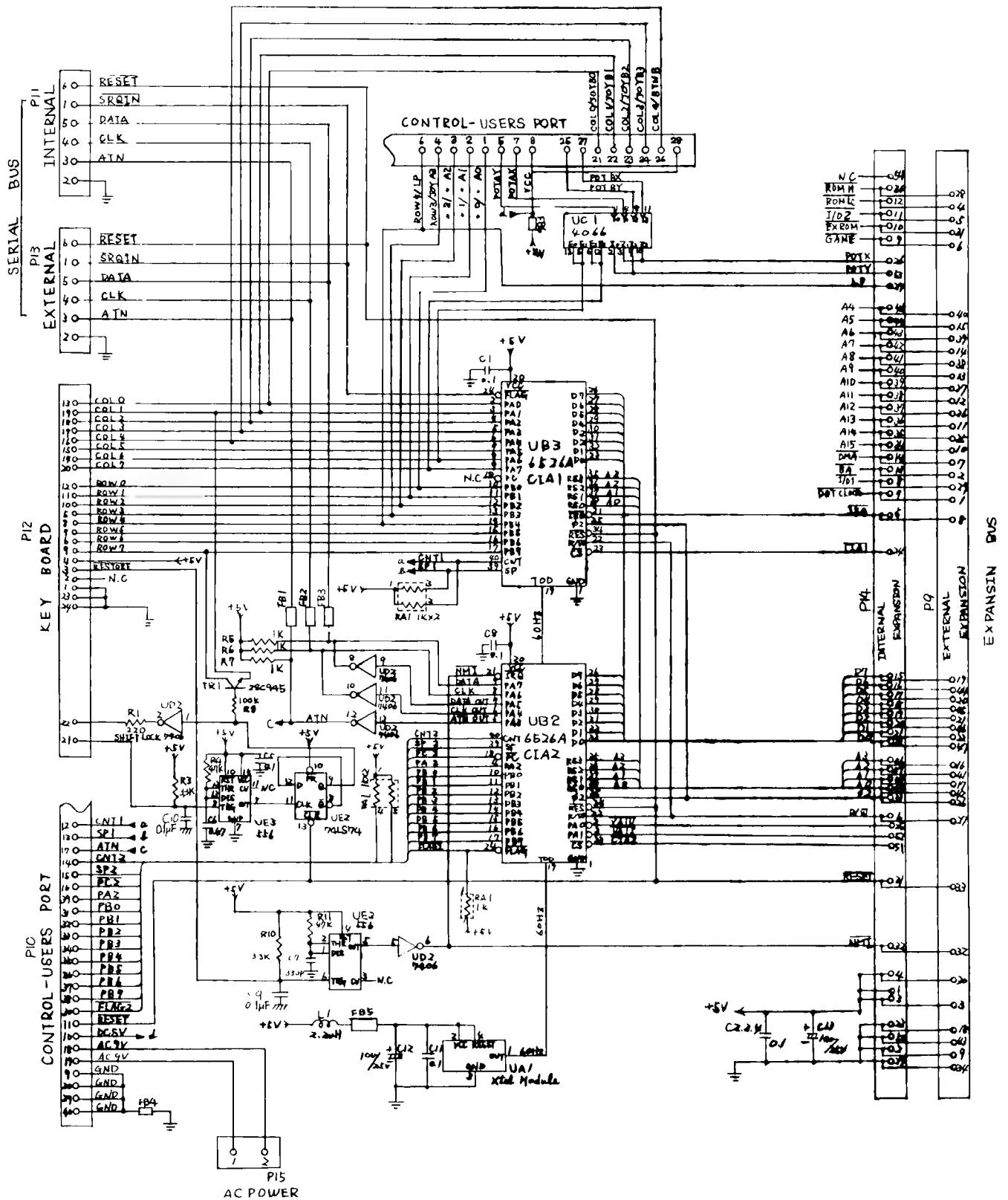
### PCB ASSEMBLY #250409-01

**PLEASE NOTE:**

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

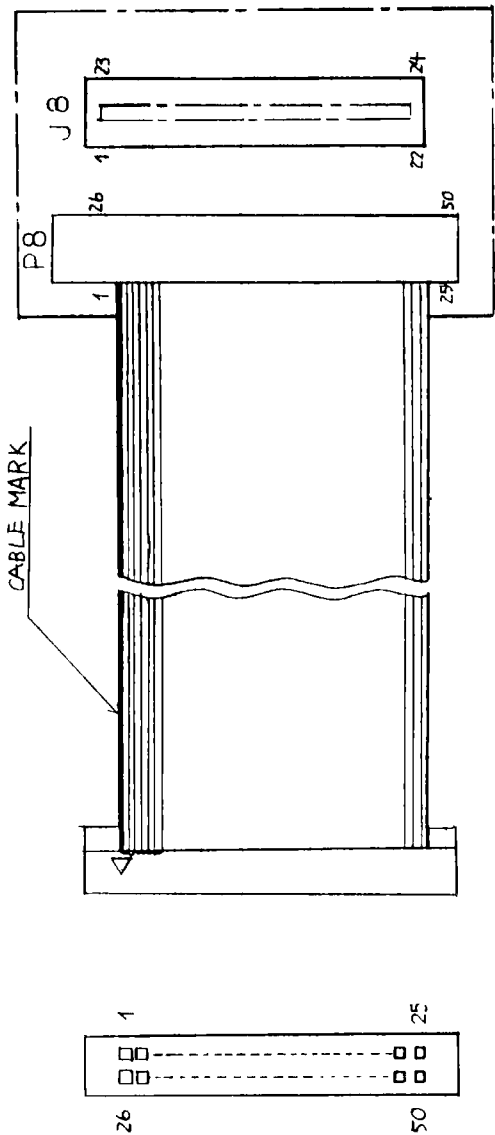
| INTEGRATED CIRCUITS   |          | RESISTOR PACK     |                           |
|---|----------|-------------------|---------------------------|
| UC1   | 4066     | RA1               | 1K 8Pin                   |
| UB2, 3  | 6526 CIA | <b>CAPACITORS</b> |                           |
| UD2   | 7406     |                   |                           |
| UE2   | 74LS74A  | C1-5              | Ceramic 0.1 $\mu$ F, 25V  |
| UE3   | 556      | C6                | Ceramic 0.47 $\mu$ F, 50V |
| TRANSISTORS   |          | C7                | Ceramic 330pF, 50V        |
| TR1   | 2SC 945  | C8-11             | Ceramic 0.1 $\mu$ F, 25V  |
| <b>RESISTORS</b> — All Values are in ohms-1/4 W<br>5% unless noted otherwise. |          | C12, 13           | Elect 10 $\mu$ F, 25V     |
| R1  | 220      | MISCELLANEOUS     |                           |
| R3  | 3.3K     | FB1-6             | Ferrite Bead              |
| R4  | 47K      | L1                | Coil Inductor 2.2 $\mu$ H |
| R5, 6, 7  | 1K       | UA1               | Crystal Module 60Hz       |
| R8  | 100K     |                   |                           |
| R10   | 3.3K     |                   |                           |
| R11   | 47K      |                   |                           |

# SX 64 I/O SCHEMATIC DIAGRAM

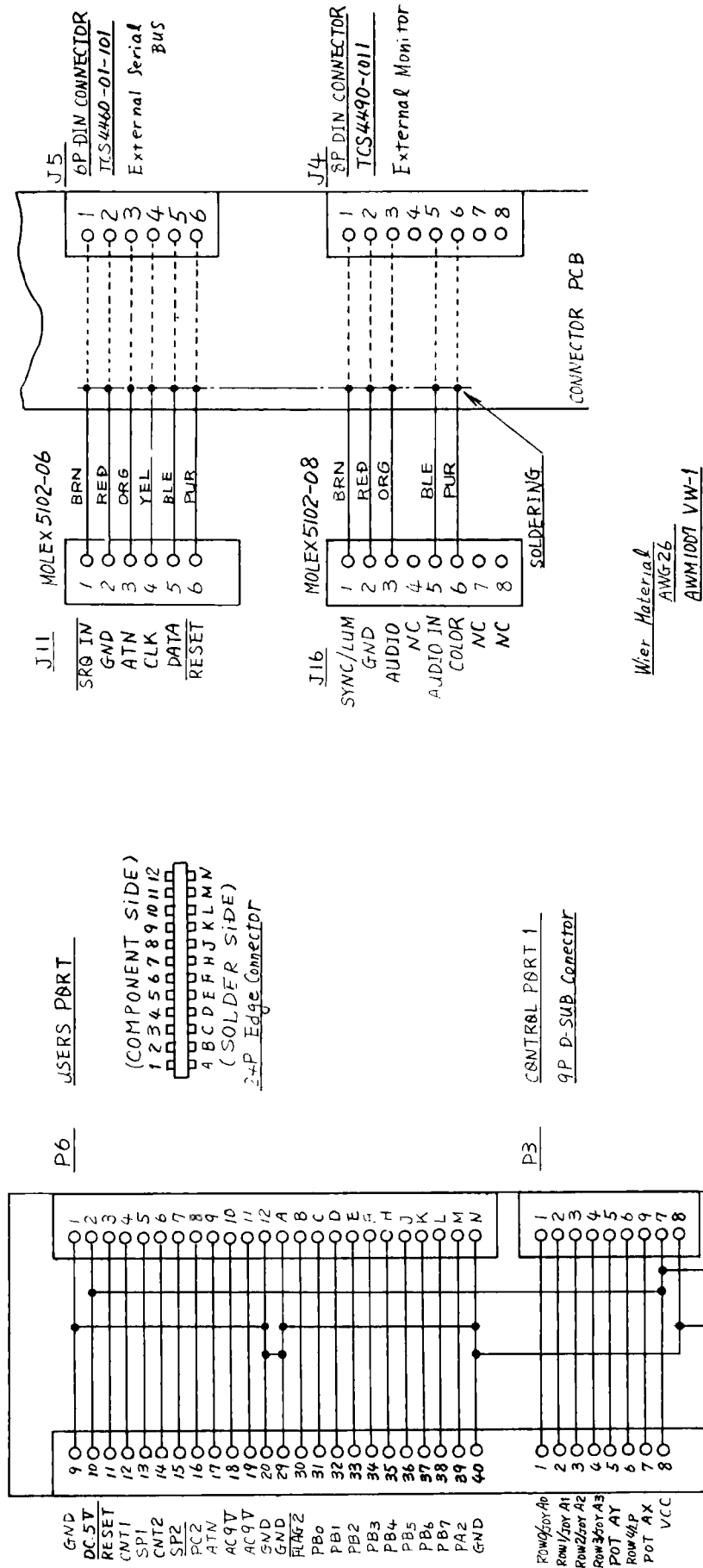


# **SX 64 EXPANSION PCB LAYOUT**

| EXPANSION | P8 | J8 | EXPANSION | P8 | J8 |
|-----------|----|----|-----------|----|----|
| GND       | 9  | 1  | GND       | 34 | 23 |
| +5 V      | 3  | 2  | ROMH      | 28 | 24 |
| +5 V      | 30 | 3  | RESET     | 33 | 25 |
| LRQ       | 8  | 4  | NMI       | 32 | 26 |
| R/W       | 27 | 5  | Sø2       | 26 | 27 |
| DOT CLOCK | 1  | 6  | A15       | 10 | 28 |
| I/O1      | 29 | 7  | A14       | 35 | 29 |
| GAME      | 6  | 8  | A13       | 11 | 30 |
| EXROM     | 31 | 9  | A12       | 36 | 31 |
| I/O2      | 5  | 10 | A11       | 12 | 32 |
| ROML      | 4  | 11 | A10       | 37 | 33 |
| BA        | 2  | 12 | A9        | 13 | 34 |
| DMA       | 7  | 13 | A8        | 38 | 35 |
| D7        | 19 | 14 | A7        | 14 | 36 |
| D6        | 44 | 15 | A6        | 39 | 37 |
| D5        | 20 | 16 | A5        | 15 | 38 |
| D4        | 45 | 17 | A4        | 40 | 39 |
| D3        | 21 | 18 | A3        | 16 | 40 |
| D2        | 46 | 19 | A2        | 41 | 41 |
| D1        | 22 | 20 | A1        | 17 | 42 |
| DO        | 47 | 21 | A0        | 42 | 43 |
| GND       | 18 | 22 | GND       | 43 | 44 |
| OPEN      | 23 | —  | OPEN      | 48 | —  |
| "         | 24 | —  | "         | 49 | —  |
| "         | 25 | —  | "         | 50 | —  |



# SX 64 EXPANSION SCHEMATIC DIAGRAM





# SX 64 MONITOR ASSEMBLY PARTS LIST

## PLEASE NOTE:

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

## CHASSIS PARTS

|      |               |                            |
|------|---------------|----------------------------|
| V01  | *CRT,         | 150BMB22-AF                |
|      | *CRT Socket,  | C39158-D                   |
| DY1  | *Def. Yoke,   | C29131-VA (See note below) |
| T502 | *F.B. Transf. | CJ39587-00A                |
| Q907 | Transistor,   | 2SD1118                    |
| Q503 | Transistor,   | 2SC2335                    |
| R523 | *Focus Pack,  | CJ49510-257                |
| C001 | *Ceramic Cap, | 1000pF, 3KV, + 100%, - 0%  |

### NOTE:

IF DEFLECTION YOKE CJ26235-00A IS USED,  
THE FOLLOWING PARTS VALUES CHANGE:

| DEF and POWER REG PCB 1124 A-1 |                 |                                 |
|--------------------------------|-----------------|---------------------------------|
| CAPACITORS                     |                 |                                 |
| C515, 517                      | *Polypropylene, | 5600pF, 630V, $\pm 5\%$         |
| C519, 520                      | *Elect,         | 4.7 $\mu$ F, 160V, + 30%, - 10% |

| VIDEO and AUDIO PCB 1124 A-2 |                 |                               |
|------------------------------|-----------------|-------------------------------|
| CAPACITORS                   |                 |                               |
| C201                         | Elect,          | 1000 $\mu$ F, 25V, $\pm 20\%$ |
| C206                         | Bi-Polar Elect, | 4.7 $\mu$ F, 50V, $\pm 20\%$  |
| C522                         | Mylar,          | .1 $\mu$ F, 50V, $\pm 20\%$   |

\* SAFETY COMPONENTS — Use EXACT replacement ONLY.



| DEF and POWER REG PCB 1123 A-1  |   |
|---|---|
| INTEGRATED CIRCUITS   |   |
| IC401<br>IC501  | Vert., $\mu$ PC1031H2<br>Hor., AN5750   |
| TRANSISTORS   |   |
| Q401<br>Q501<br>Q502<br>Q902<br>Q903,4,5<br>Q906<br>Q907                                  | 2SA1015 (Y, GR)<br>2SC1685<br>2SA817A (O,Y)<br>2SA1015 (Y, GR)<br>2SC1685<br>2SA817A (O,Y)<br>2SD1118   |
| DIODES  |   |
| D501<br>D502<br>D504,5,<br>6,7<br>D902<br>D903<br>D904<br>D905<br>D906<br>D907<br>D908, 9 | Zener RD6.8E (B2)<br>V19E<br>V09E<br>U19B<br>*Zener RD6.8E (B2)<br>Zener Hz12 (B)<br>*Zener RD6.8E (B2)<br>1S2473H<br>*Zener RD13E (B1)<br>1S2473H  |
| RESISTORS   |   |
| R901<br>R910<br>R917<br>R923<br>R924<br>R925<br>R926                                      | *Carbon, 8.2K, 1/4W, $\pm$ 5%<br>*Carbon, 9.1K, 1/4W, $\pm$ 5%<br>Oxide Mtl Film, 1.5K, 1W, $\pm$ 5%<br>*Carbon, 27K, 1/4W, $\pm$ 5%<br>*Carbon, 10K, 1/4W, $\pm$ 5%<br>*Carbon, 68K, 1/4W, $\pm$ 5%<br>Mtl Film, 0.22, 2W, $\pm$ 10% |
| VARIABLE RESISTORS  |   |
| R409<br>R413<br>R417<br>R508<br>R909  | V. Hght, 22K<br>V. Lin, 2.2K<br>V. Center, 1K<br>Hor. Hold, 2.2K<br>*B1 Adj., 2K  |

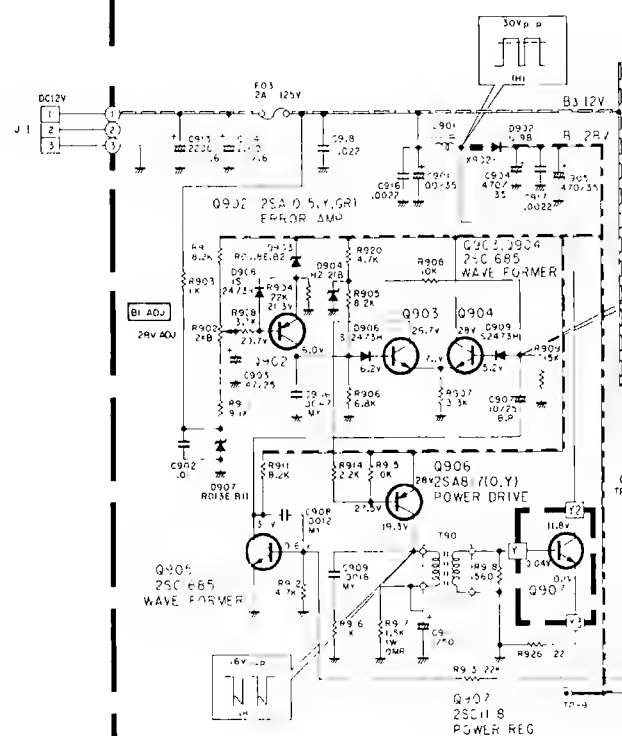
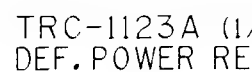
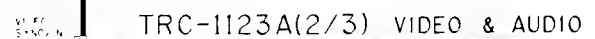
| CAPACITORS   |  |   |  |
|--|--|---|--|
| C401, 404<br>C408<br>C409, 410<br>C412<br>C413<br>C509<br>C515,16,<br>17<br>C518<br>C520<br>C523, 24<br>C525<br>C901<br>C904, 905<br>C907<br>C913, 914 | Bi-Polar Elect,<br>Tantalium,<br>Tantalium,<br>Elect,<br>Elect,<br>Polypropylene,<br>*Polypropylene,<br>Mtl Mylar,<br>*Polypropylene,<br>*Elect,<br>Elect,<br>*Elect,<br>*Elect,<br>Bi-Polar Elect,<br>*Elect, | 1 $\mu$ F,<br>1 $\mu$ F,<br>22 $\mu$ F,<br>1000 $\mu$ F,<br>0.22 $\mu$ F,<br>5600pF,<br>4700pF,<br>1.5 $\mu$ F,<br>0.047 $\mu$ F,<br>470 $\mu$ F,<br>4.7 $\mu$ F,<br>100 $\mu$ F,<br>470 $\mu$ F,<br>10 $\mu$ F,<br>2200 $\mu$ F, | 50V, $\pm$ 20%<br>25V, $\pm$ 10%<br>10V, $\pm$ 10%<br>25V, $\pm$ 20%<br>50V, $\pm$ 20%<br>50V, $\pm$ 5%<br>630V, $\pm$ 5%<br>100V, $\pm$ 5%<br>200V, $\pm$ 10%<br>16V, + 30%, - 10%<br>160V, + 30%, - 10%<br>35V, + 30%, - 10%<br>35V, + 30%, - 10%<br>25V, $\pm$ 20%<br>16V, + 30%, - 10% |
| TRANSFORMERS   |  |   |  |
| T901<br>T501<br>T502<br>T531   | Pwr Drive,<br>Hor Drive,<br>*F.B.,<br>*Side Pin,   | A76567-MA<br>A76568-MA<br>CJ39587-00A<br>C39084-A   |  |
| MISCELLANEOUS  |  |   |  |
| F03  | *Fuse, 2A, 125V  |   |  |
| VIDEO and AUDIO PCB ASSY 1123 A-2  |  |   |  |
| INTEGRATED CIRCUITS  |  |   |  |
| IC201<br>IC601   | Audio, HA11401<br>Video, AN5250  |   |  |
| TRANSISTORS  |  |   |  |
| Q201<br>Q601   | 2SA562TM (Y)<br>2SD1133  |   |  |
| DIODES   |  |   |  |
| D601<br>D503   | Zener, RD10E (B3)<br>1S2076A   |   |  |

\*SAFETY COMPONENTS — Use EXACT replacement ONLY.

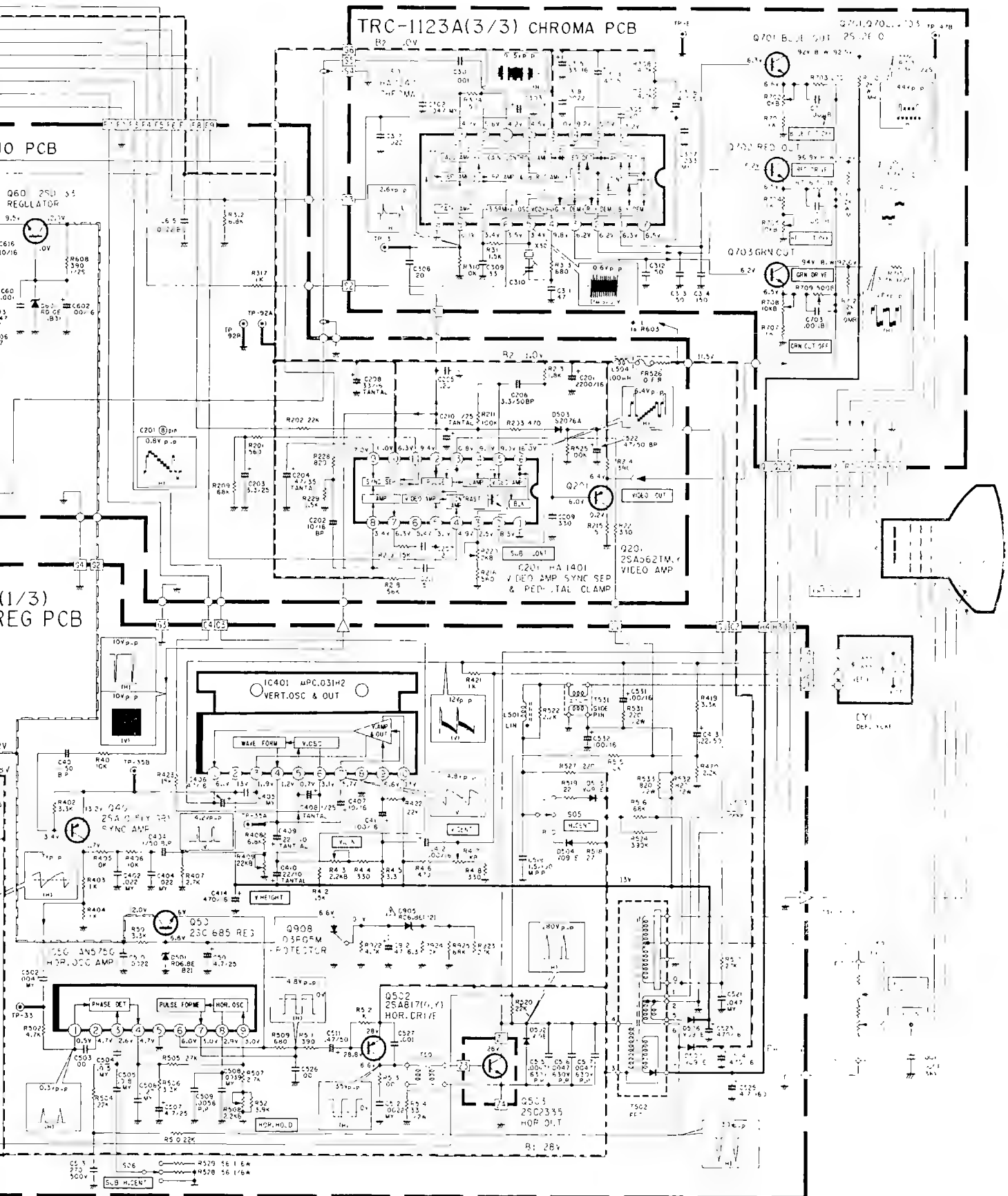
| VIDEO and AUDIO<br>PCB ASSY 1123 A-2 (Continued) |  |               |                   |
|--|--|---------------|-------------------|
| VARIABLE RESISTOR                                |  |               |                   |
| R220   | Sub Cont, 2K                           |               |                   |
| CAPACITORS                                       |  |               |                   |
| C201   | Elect,                                 | 2200 $\mu$ F, | 16V, + 30%, - 10% |
| C202   | Bi-Polar Elect,                        | 10 $\mu$ F,   | 16V, $\pm$ 20%    |
| C203   | Elect,                                 | 3.3 $\mu$ F,  | 25V, + 30%, - 10% |
| C204   | Tantalium,                             | 0.47 $\mu$ F, | 35V, $\pm$ 20%    |
| C206   | Bi-Polar Elect,                        | 3.3 $\mu$ F,  | 50V, $\pm$ 20%    |
| C208   | Tantalium,                             | 33 $\mu$ F,   | 16V, $\pm$ 10%    |
| C210   | Tantalium,                             | 1 $\mu$ F,    | 25V, $\pm$ 20%    |
| C604   | Bi-Polar Elect,                        | 1 $\mu$ F,    | 50V, $\pm$ 20%    |
| C608   | Elect,                                 | 1000 $\mu$ F, | 25V, $\pm$ 20%    |
| C522   | Bi-Polar Elect,                        | 0.47 $\mu$ F, | 50V, $\pm$ 20%    |
| MISCELLANEOUS                                    |  |               |                   |
| FR526  | * Fusible Resistor, 10, 1/4W, $\pm$ 5% |               |                   |
| L504   | Peaking Coil                           | 100 $\mu$ H   |                   |
| L601   | Peaking Coil                           | 4.7 $\mu$ H   |                   |

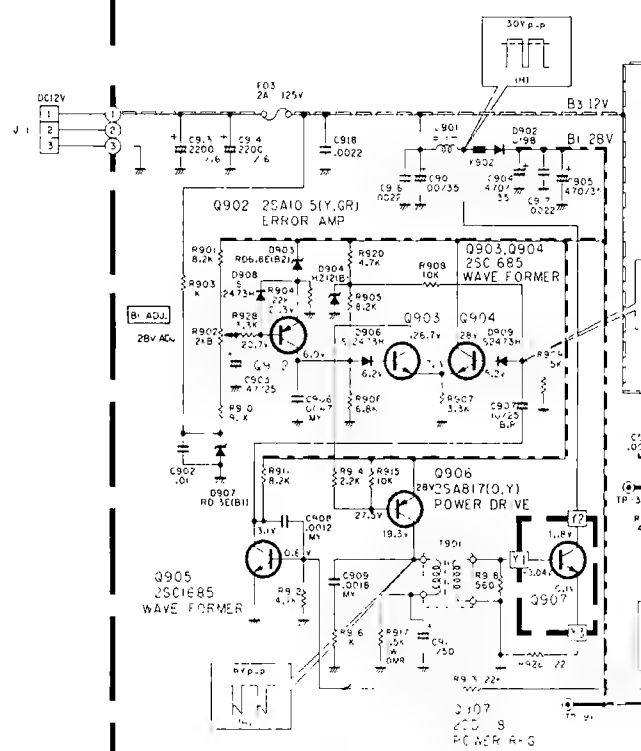
| CHROMA PCB ASSY 1123 A-3             |   |
|--------------------------------------|---|
| INTEGRATED CIRCUITS                  |   |
| IC301                                | HA11247   |
| TRANSISTORS                          |   |
| Q701,2,3                             | 2SC2610   |
| RESISTORS                            |   |
| R710,11,<br>12                       | Oxide Mtl Film, 12K, 1W, $\pm$ 5%   |
| VARIABLE RESISTORS                   |   |
| R702<br>R705<br>R706<br>R708<br>R709 | B. Cut-Off, 10K<br>R. Cut-Off, 10K<br>R. Drive, 500<br>G. Cut-Off, 10K<br>G. Drive, 500   |
| CAPACITORS                           |   |
| C303<br>C304<br>C306<br>C310<br>C315 | Elect, 100 $\mu$ F, 16V, $\pm$ 20%<br>Elect, 0.47 $\mu$ F, 50V, $\pm$ 20%<br>Elect, 4.7 $\mu$ F, 50V, $\pm$ 20%<br>Trimmer<br>Elect, 33 $\mu$ F, 16V, $\pm$ 20% |
| MISCELLANEOUS                        |   |
| X301                                 | Crystal A75746  |

\* SAFETY COMPONENTS — Use EXACT replacement ONLY.

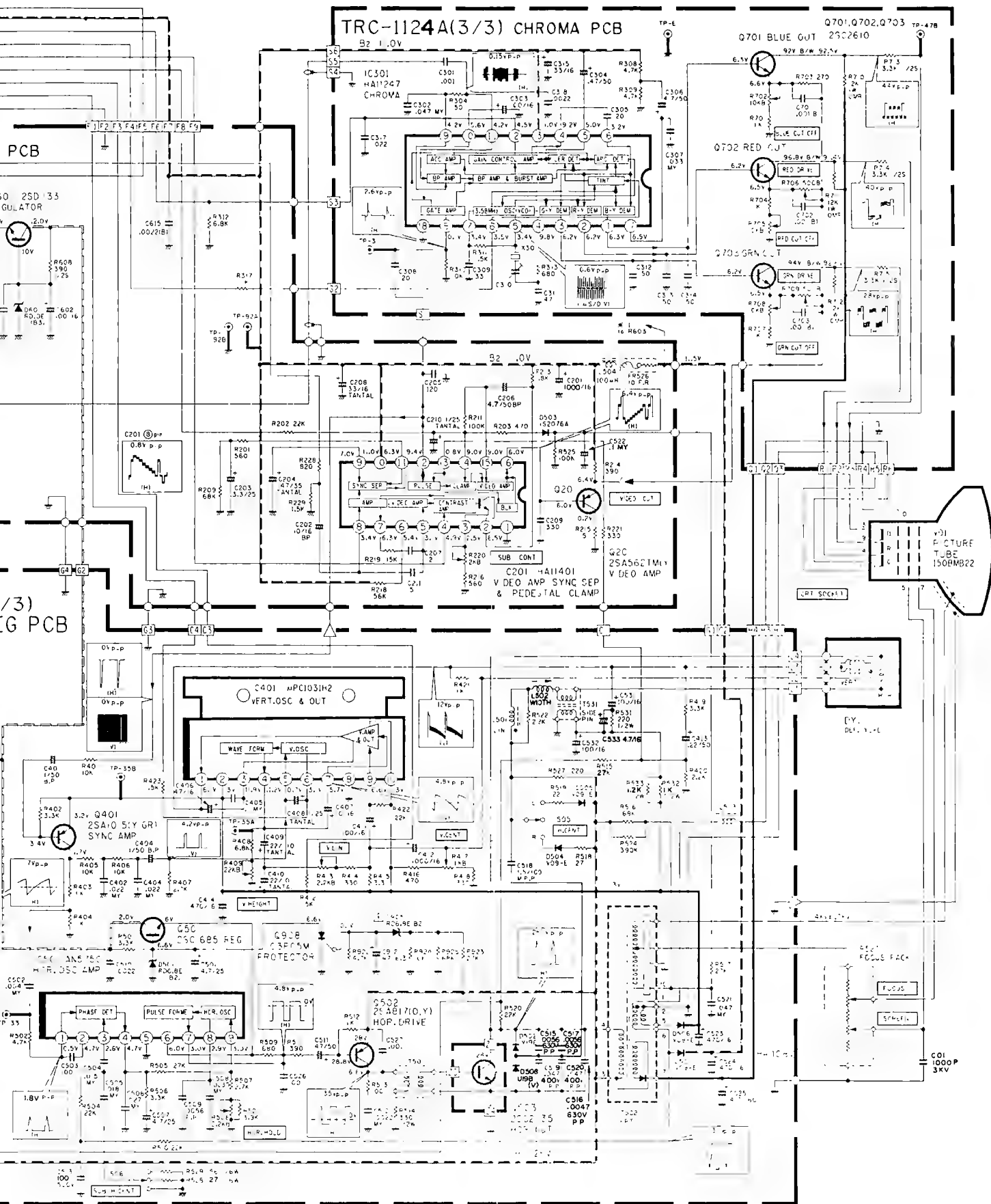


# SX 64 MONITOR SCHEMATIC -01

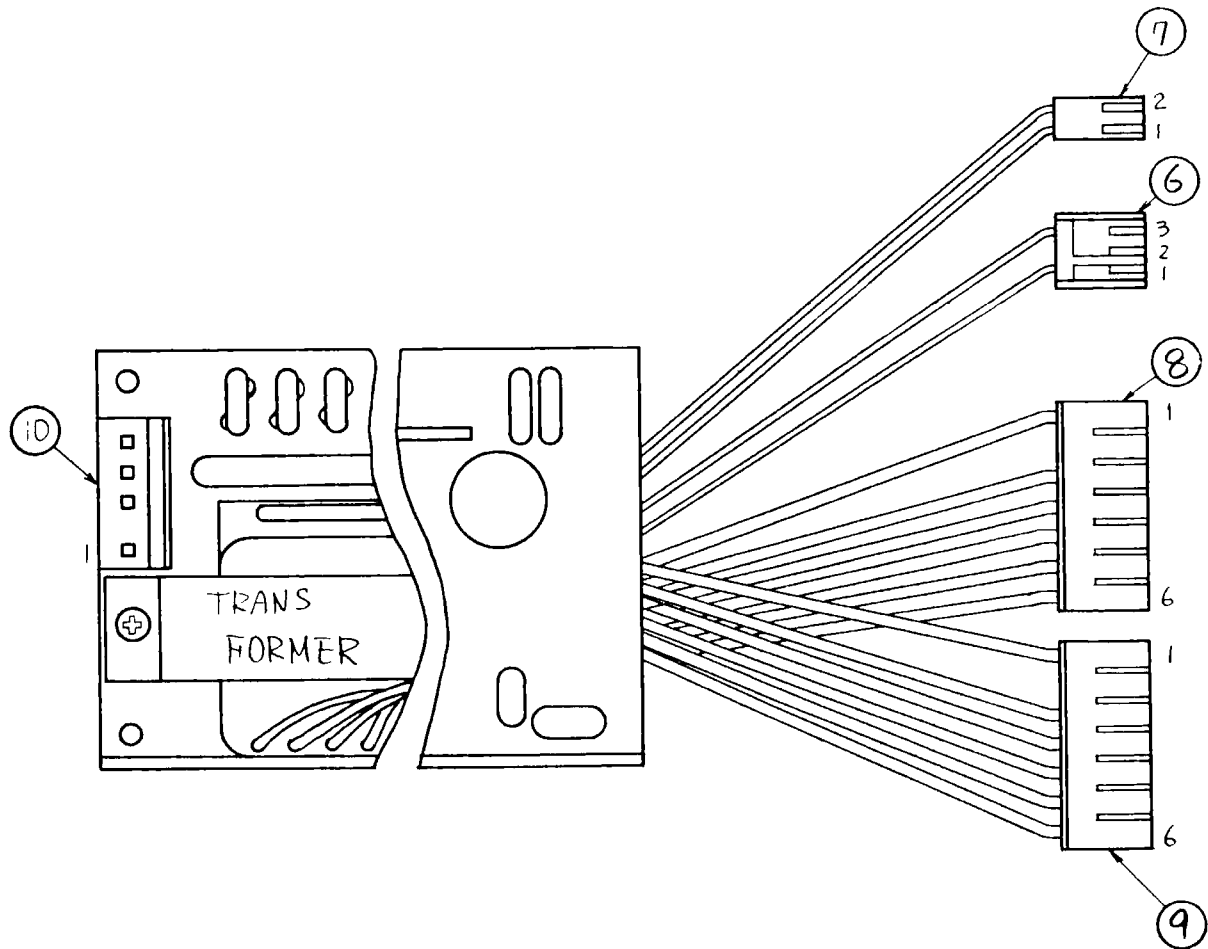




# SX 64 MONITOR SCHEMATIC -01A



# POWER SUPPLY #250623 WIRING DIAGRAM

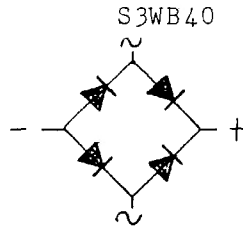


| PART NO | VENDOR NO      | VENDOR'S NAME | POLE | PIN NO | NAME OF SIGNAL | COLOR | WIRE            | NOTE |
|---------|----------------|---------------|------|--------|----------------|-------|-----------------|------|
| 6       | Ei<br>171822-3 | AMP           | 3    | 1      | 12V            | BRN   | UL1007<br>AWG24 |      |
|         |                |               |      | 2      | NC             |       |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
| 7       | 5102-02        | MOLEX         | 2    | 1      | AC9V           | BLU   | UL1007<br>AWG24 |      |
|         |                |               |      | 2      | AC9V           | BLU   |                 |      |
| 8       | 5227-06        | MOLEX         | 6    | 1      | 5V             | ORG   | UL1007<br>AWG18 |      |
|         |                |               |      | 2      | 5V             | ORG   |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
|         |                |               |      | 4      | GND            | BLK   |                 |      |
|         |                |               |      | 5      | 12V            | RED   |                 |      |
|         |                |               |      | 6      | 12V            | RED   |                 |      |
| 9       | 5227-06        | MOLEX         | 6    | 1      | 5V             | ORG   | UL1007<br>AWG18 |      |
|         |                |               |      | 2      | 5V             | ORG   |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
|         |                |               |      | 4      | GND            | BLK   |                 |      |
|         |                |               |      | 5      | 12V            | RED   |                 |      |
|         |                |               |      | 6      | 12V            | RED   |                 |      |
| 10      | 5285-04A       | MOLEX         | 4    | 1      | AC IN          |       |                 |      |
|         |                |               |      | 2      | AC IN          |       |                 |      |
|         |                |               |      | 3      | NC             |       |                 |      |
|         |                |               |      | 4      | F,G            |       |                 |      |

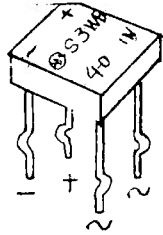


# PARTS INFORMATION

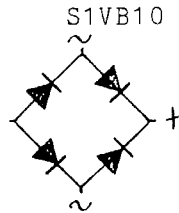
1, REC1



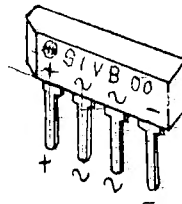
RECTIFIER STACKS DIODES



2, REC2



RECTIFIER STACKS DIODES



3, D1

ERB24-06C

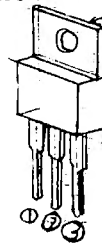
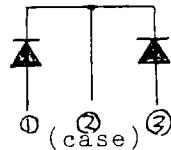


FAST RECOVERY DIODES



4, D6,7

ESAC85-009 , ESAC82-004 SCHOTTKY BARRIER DIODES

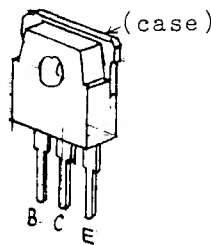
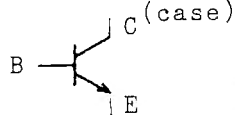


JEDEC:TO-220AB

5, Q1

2SC2625

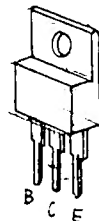
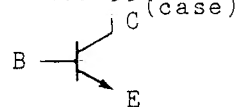
POWER TRANSISTOR



6, Q3

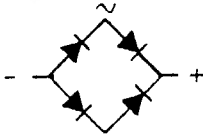
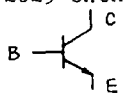

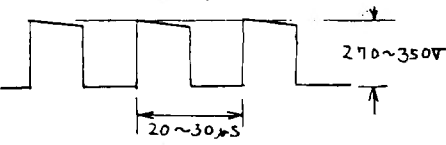
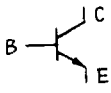
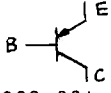


2SC2334

POWER TRANSISTOR



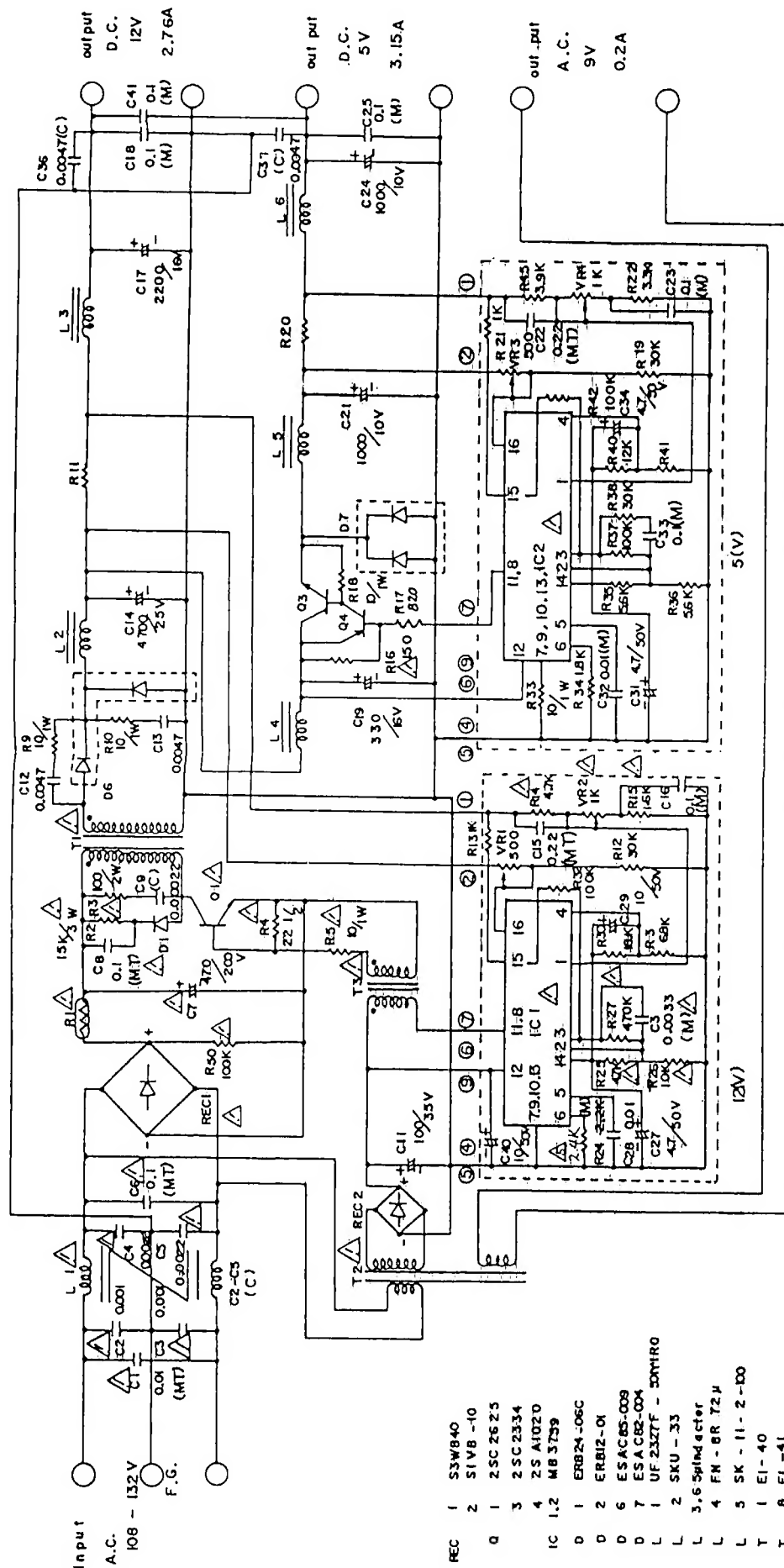
JEDEC:TO-220AB

# TROUBLESHOOTING GUIDE

| TROUBLE                           | CHECK POINT                    | CAUSES AND TEST  | SOLUTION                      |
|-----------------------------------|--------------------------------|--|-------------------------------|
| NO OUTPUT                         | SOME SCRAP INSIDS              | SHORT CIRCUIT BIY SCRAP <u>YES</u>   | CLEANING                      |
|                                   | OK                             |  |                               |
| NO AC 9V OUTPUT                   | SUPPLEMENTARY CIRCUIT          | T2 TRANSFORMER SHORT OR OPEN <u>YES</u>  | CHANGE T2                     |
|                                   | OK                             | T2 PRIMARY LEAD WHITE TO WHITE 160~200 $\Omega$                                      |                               |
|                                   |                                | SECONDARY LEAD RED TO RED 9~12 $\Omega$  |                               |
|                                   |                                | SECONDARY LEAD BLUE TO BLUE 3.2~3.7 $\Omega$   |                               |
|                                   |                                | OK   |                               |
|                                   |                                | REC2 S1VB-10 DIODE<br>RECTIFIED VOLTAGE DC 12~15V                                    |                               |
| IN CASE OF REC1 SHORT FUSE IS CUT | CHECK BRIDGH DIODE             | REC1 S3WB40 SHORT OR OPEN <u>YES</u>   | CHANGE REC1                   |
|                                   | OK                             |  |                               |
|                                   |                                |     |                               |
| IN CASE OF Q1 SHORT FUSE IS CUT   | CHECK SWITCHING TRANSISTOR     | Q1 2SC2625 SHORT OR OPEN <u>YES</u>  | CHANGE Q1                     |
|                                   | OK                             |  |                               |
|                                   |                                |     |                               |
|                                   | CHECK HIGH-SPEED RECTIFY DIODE | D6 ESAC85-009 SHORT OR OPEN <u>YES</u>   | CHANGE D6                     |
|                                   | OK                             |  |                               |
|                                   |                                |     |                               |
| 12V CONTROL CIRCUIT               |                                | CHECK BETWEEN COLLECTOR AND EMITTER OF 2SC2625 IN Q1 BY SYNCHRO-SCOPE <u>NO</u>      | CHANGE A BOARD OF 12V CONTROL |
|                                   |                                |  |                               |
|                                   |                                | YES  |                               |
|                                   |                                | 12V OUTPUT ADJUSTMENT SHIFT <u>YES</u>   | RE-ALIGNMENT                  |
| 5V output ONLY NO OUTPUT          | CHECK SWITCHING TRANSISTOR     | Q3 2SC2334 SHORT OR OPEN <u>YES</u>  | CHANGE Q3                     |
|                                   | OK                             |  |                               |
|                                   |                                |   |                               |
|                                   | CHECK DRIVE TRANSISTOR         | Q4 29A1020-0orY SHORT OR OPEN <u>YES</u>   | CHANGE Q4                     |
|                                   | OK                             |  |                               |
|                                   |                                |   |                               |
|                                   | CHECK HIGH-SPEED RECTIFY DIODE | D7 ESAC82-004 SHORT OR OPEN <u>YES</u>   | CHANGE D7                     |
|                                   | OK                             |  |                               |
|                                   |                                |   |                               |
| 5V CONTROL CIRCUIT                |                                | CHEC BETWEEN EMITTER OF 2SC2334 AND GRUND IN Q4 BY SYNCHRO-SCOPE <u>NO</u>           | CHANGE A BOARD OF 5V CONTROL  |
|                                   |                                |  |                               |
|                                   |                                | YES  |                               |
|                                   |                                | 5V OUTPUT ADJUSTMENT SHIFT <u>YES</u>  | RE-ALIGNMENT                  |

# POWER SUPPLY #250623 SCHEMATIC DIAGRAM

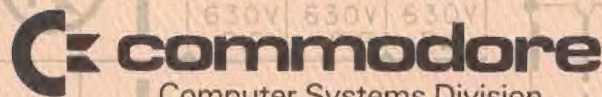
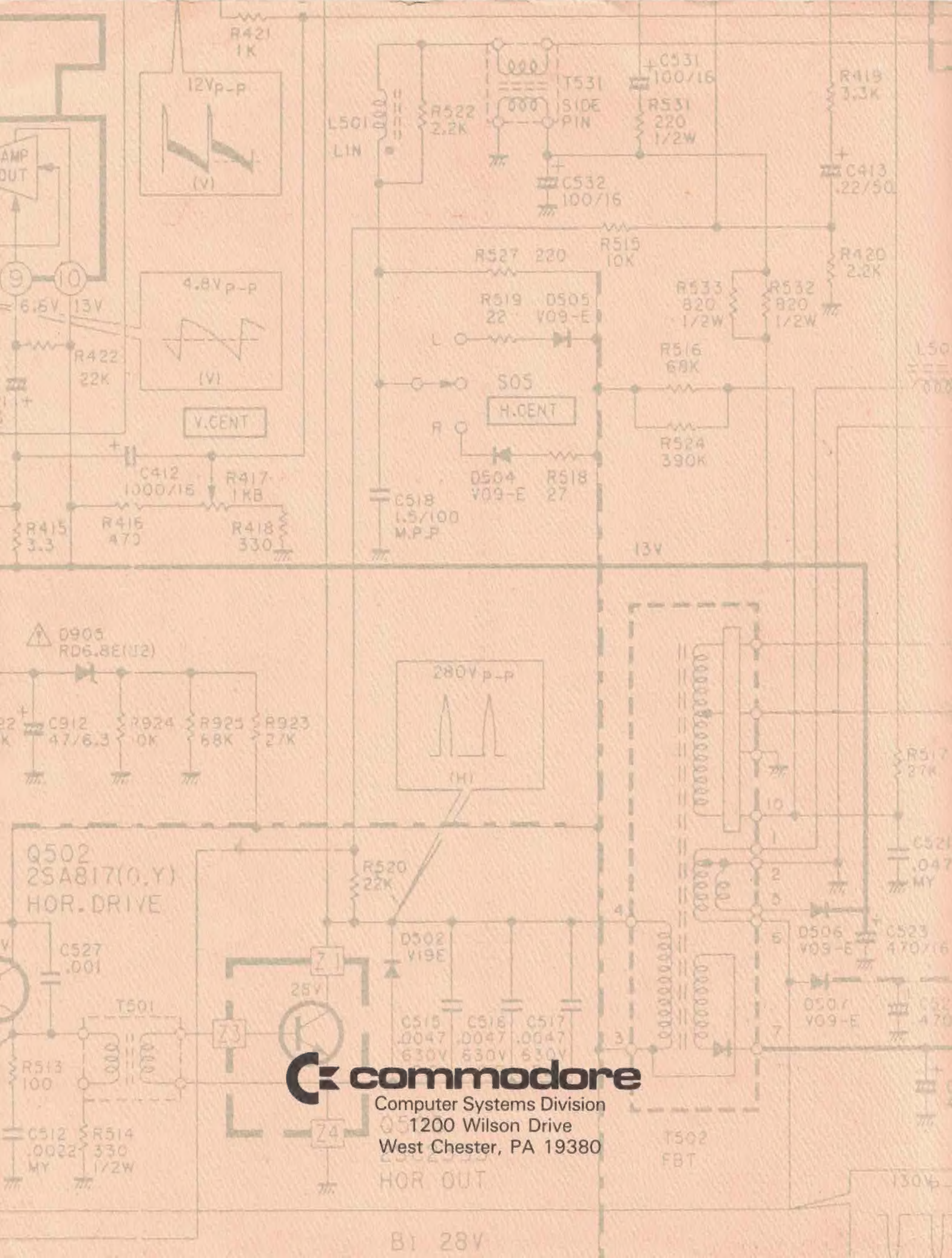
## SCHEMATIC DIAGRAM



CAPACITOR

(M) POLYESTER FILM CAPACITOR  
(MT) METALLIZED POLYESTER FILM CAPACITOR  
(C) CERAMIC CAPACITOR

NOTE  
ALL CAPACITANCE ARE IN MICROFARADS  
ALL RESISTANCE VALUES ARE IN OHMS  
UNLESS OTHERWISE SPECIFIED IN THE DIAGRAM.  
1/4W.  
CRITICAL COMPONENT



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